California Utility Allowance Calculator User Guide

10/8/08

Background

The California Tax Credit Allocation Committee (TCAC) is the state agency that allocates federal and state Low Income Housing Tax Credits (LIHTCs) in support of affordable housing. Applicants for LIHTCs must estimate the monthly income and expenses for proposed projects. As part of the calculation, applicants need to provide an estimate of the utility costs tenants will face. Historically, the most common source of the utility cost estimate was local public housing authorities' Utility Allowance Schedules. Those schedules generally overestimated what tenants' utility costs will be. The California Energy Commission has worked with the affordable housing community and TCAC to support creation of a new tool for more accurately estimating tenants' utility costs: the California Utility Allowance Calculator, or CUAC.

Major Changes since the CUAC Beta Version (January 2008)

In January, the CEC and KEMA released a beta version of the California Utility Allowance Calculator (CUAC), previously called Project-Specific Utility Allowance (PSUA) Tool. Throughout the past 9 months, the affordable housing community provided valuable feedback to improve the CUAC.

Major changes since the beta version are listed below:

- To minimize duplicative data entry efforts, you can now copy one project to another that shares similar building characteristics.
- The calculator is split into two modules: input forms and lookup tables. This simplifies the administrative process of updating the lookup tables.
- The output forms can now be printed for annual compliance using current tariff updates from the CEC.
- The output forms are modified to resemble HUD Form 52667, "*Allowances for Tenant-Furnished Utilities and Other Services.*"
- Added tips and instructions via rollover bubbles throughout the calculator.
- The codes, queries and administrative menus are now locked. If you're interested in reviewing the locked items, please contact the CEC or KEMA.

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CUAC Download Instructions

The California Utility Allowance Calculator (CUAC) can be downloaded from the SharePoint Site below:

http://www.energy.ca.gov/renewables/06-NSHP-1/affordablehousing/CUAC.zip

Web address: https://usprojects.kema.com/sites/uat
User name: kemausext\kema-uat
Password: sftdl1

You must first create a folder in your C drive and name it "CUAC". Download the CUAC.zip file from the website above into the "CUAC" folder you've just created on your C drive. Unzip the files from the CUAC zip file. Run the file "UACTool-Rev20.mdb".

CUAC User Guidelines

The CUAC tool has 6 steps for the completion of a project specific utility allowance estimate:

Step 1: Start a new project
Step 2: Project descriptions: General project information, utilities information and apartment details
Step 3: Energy usage from "Alternative Compliance Methods"
Step 4: Lighting and appliances
Step 5: CEC- PV Calculator
Step 6: Verify summary and print results

General Tips:

- The green boxes in the Tool are for Data Input; the yellow boxes are for Calculated Output.
- At any point, you can enter information for a new project by clicking on the **"Start New Project"** button on the top left corner.
- You are encouraged to click the **"QC Check"** button frequently to make sure your inputs are internally consistent.
- At any point, you can **Print Draft** to look at the results of your inputs. However, when you click on **Print Final**, it will lock all your inputs from further edits.

Step 1. Start a New Project (or Copy from an Old One)

User of the CUAC tool clicks on "Start New Project" to create a new project. Fill out the "Project Name" field with a unique name to identify the project. You can change the Project Name at any point during the data entry phase.

If you have an existing project you want to copy from, you need to first create a new project and give it a unique Project Name. Click on "Copy to This" button on the top left corner. Pick the project you would like to Copy From and verify the project you would like to Copy To. Click on "Copy Project" to complete the task.

Warning on Copying a Project:

- It is important that you first create a blank new project before you start copying data from an existing project. Once you click the "Copy Project" button, all the data in the "Copy to" project will be wiped out and replaced by the data from the existing project you instructed it to Copy From.

Step 2. Project descriptions: General project information, utilities information, and apartment details

There are three tabs associated with project descriptions: Project Information, Utility Information and Apartment Details.

Project information

This page requires you to enter site address, owner address and primary contact for your project.

Utility information

This page requires you to select your utility providers and rate schedules. This includes, electric, gas, trash and water. Since heating fuel and cooking fuel could be either electric, natural gas, or propane, users need to specify the type of fuels they will use for these end uses. Remember that the CUAC (like utility allowances schedules) is only meant to estimate costs for **tenant-paid** utilities. For example, if tenants do not pay for water or trash, choose the selection that says, "Not Paid by the Tenant."

You must select the local utility's "Territory," if it applies. For example, if you choose PG&E for electricity, you will have a choice of "P" through "Z" as territory designations. These values align with the utility's billing territories. Tariff values differ from one "territory" to another.

Apartment Details

This page allows you to enter the number and type of units in your project. You need to how many apartments the project has by the number of bedrooms, and by whether they are affordable housing units or market rate units. In the last checkbox, you have to indicate whether the lamps for the associated apartment configuration are high efficacy or not. "High Efficacy" can only be

chosen if ALL lamps (other than appliance lamps, lamps on dimmers, or those where a CFL would not fit) are to be high efficacy.

Step 3. Energy usage from "Alternative Compliance Methods"

Tip:

- You must complete the information under "Apartment Details" tab in Step 2 before you proceed with Step 3.

There are three tabs associated with Alternative Compliance Methods (ACM) inputs: Cooling, Heating and Domestic Hot Water. For each apartment type, please average usage across all apartments of the same type and enter the monthly usage in the appropriate row. For EQuest users, cooling includes "Space Cool and Heat Rejection"; heating includes "Space Heat", "HPSupp." and "Hot Water"; and Domestic Hot Water includes "Pumps and Aux." For each end use, enter kWh or kBtu (NOT both) as appropriate for that end use, depending upon the fuel source and the format of the data from the ACM.

Warning on Using the CEC-Approved ACM Programs:

- When performing the building modeling with one of the CEC approved compliance modeling programs, you will need to do the analysis at the apartment level, rather than the whole building level. Using a spreadsheet, you should develop an average for all studio apartments in the project, an average for all one bedroom apartments, etc. Note that a two-bedroom apartment on the southwest corner of the top floor will use more cooling energy than one on the northeast corner of the ground floor. It is highly recommended that the modeling and averaging approaches ensure a fairly conservative estimate. In other words, it is better to somewhat overestimate the average energy use than underestimate it.

Step 4: Lighting and Appliances

Lighting and Appliances are covered on the last two tabs on usage. Note that you cannot enter data on the Lighting sheet. The Lighting data is automatically calculated from the information already entered above. The calculation draws from the number and configuration of apartments and whether or not they are "high efficacy" units. It then derives the kWh usage based on assumptions supported by an Energy Commission residential lighting study conducted in 1995.

The Appliances tab lets you indicate which appliances will be installed, and which of these will be Energy Star. If the apartment type will have clothes washer and dryer hook-ups, but the appliances will not be installed by the developer, you must specify standard (non Energy Star) appliances. Likewise, if the developer is not installing the refrigerator, then specify a non Energy Star refrigerator.

If you choose "All Energy Star", that means ALL appliances that will be installed by the developer will be Energy Star. For TCAC projects, remember that specifying "Energy Star" means that the appliances will need to be installed and verified by a HERS Rater at the time that the CUAC is run for the "placed in service" submittal.

Step 5: CEC- PV Calculator

This tab accounts for the estimated energy generated by the project's PV system for offsetting residential load. The CEC- PV Calculator[1] output provides the estimted kWh production by month for each system. Please enter estimated production for each system and how much of the energy (what percent) is dedicated to the common load. The balance of each system's output will be allocated to the apartment units proportionately to their estimated energy usage.

Step 6: Verify summary and print results

Finally, the last two tabs of the tool present the aggregate result of the inputs in kWh and kBtu. The usage summaries are broken down by apartment types, end uses, and daily/monthly/annual estimates. Please verify to make sure the results look reasonable.

At any point, you can click on "Print Draft" to look at a summary report of all your inputs and calculated outputs. When all the required inputs are entered and verified, you can print out a summary report by clicking "Print Final". Once you have printed this final form, you will not be able to change your inputs again.

Warning on Printing Forms:

- Once you click on "Print Final", the calculator will lock all your inputs from further edits.
- Printing Draft or Final forms might take a minute to load up. Please be patient!

Ouput Documents

The California Utility Allowance Calculator produces 2 output documents:

- Submittal summary form. This form displays the estimated average monthly utility costs by apartment configuration. This form resembles HUD Form 52667, and will be the form on which the developer and consultant will be attesting to the accuracy of the inputs. It will be submitted to TCAC when proposing a new project for Low Income Housing Tax Credits (LIHTC). The form must be signed by the developer and a qualified consultant. For LIHTC projects, TCAC requires that the signing consultant must be CABEC CEPE-qualified and either a certified HERS Rater or a California licensed Mechanical Engineer or Electrical

[1] The CEC PV Calculator can be downloaded here:
http://www.gosolarcalifornia.ca.gov/nshpcalculator/download_calculator.html

Engineer. The CEC recommends that the same qualifications be required for use of the CUAC for other types of projects.

- Input details. This is a plan check sheet that lists all the inputs the user entered and the calculated results associated with the inputs. These detailed input sheets should be attached to the summary form when applying for funding from TCAC so that accuracy can be verified if any questions arise.